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09/380,256 08/25/99 FARIS

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EXAMINER

MM91/0712

THOMAS J PERKOWSKI  
SOUNDVIEW PLAZA  
1266 EAST MAIN STREET  
STAMFORD CT 06902

NGUYEN, H

ART UNIT

PAPER NUMBER

2871

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trad marks**

## Office Action Summary

Application No.

09/380,256

Applicant(s)

FARIS ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 February 1998.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-101 is/are pending in the application.

4a) Of the above claim(s) 5-8, 11, 12, 14-16, 18-27, 33, 34, 36-46, 48, 49, 51, 53-55, 57-64, 66, 67, 70, 71, 73-78, 80-83, 85-95 and 100 is/are withdrawn from consideration.

- 5) ☒ Claim(s) 47, 50, 52, 56 and 65 is/are allowed.
- 6) ☐ Claim(s) 1-4, 9, 10, 13, 17, 32, 68, 69, 72, 79, 84, 96-99 and 101 is/are rejected.
- 7) ☐ Claim(s) 28-31, 35 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 20) ☐ Other:

## DETAILED ACTION

1. This application has cancelled these following claims: 5-8,11,12,14-16,18-27,33,34,36-46,48,49,51,53-55,57-64,66,67,70,71,73-78,80-83,85-95 and 100, and pending these remaining claims: 1-4, 9, 10, 13, 17, 28-32, 35, 47, 50, 52, 56, 65, 68, 69, 72, 79, 84, 96-99 and 101 (based on Preliminary Amendment, date Feb. 25, 1998).

### *Specification*

2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims ~~1~~4, 9, 10, 13, ~~17~~, ~~32~~, ~~68~~, 69, 72, 79, ~~84~~, ~~96~~, 99, ~~101~~ are rejected under 35 U.S.C. 102(e) as being anticipated by Faris et al. (US5940150A).

Faris discloses in Fig. 1 that an electro-optical glazing structure has reflection and transmission modes of operation for selectively reflecting and transmitting electromagnetic radiation, respectively. An electro-optical glazing structure comprises (a) an electro-optical glazing panel of laminated construction having first and second optical states of operations; (b) optical state switching means for switching electro-optical glazing panel to first optical state of operation in order to induce electro-optical glazing structure into reflection mode of operation and for switching electro-optical glazing panel to second optical state of operation in order induce electro-optical glazing structure into transmission mode of operation (Fig. 2); (c) a window frame 4 for mounting electro-optical glazing panel as shown in Fig. 1 within a house or office building, or aboard a transportation (column2, lines 53-55) according to claim 9; (d) electromagnetic sensor 5 mounted on window frame for sensing electromagnetic conditions; (e) a battery supply 6 mounted within window frame for providing electrical power; (f) an electromagnetic-powered battery recharger 7 mounted within window frame for recharging the battery; (g) electrical circuitry 9 mounted within window frame for producing glazing control voltage for switching first and second optical states of operation; (h) a programmable micro-

computer chip 8 mounted within window frame for controlling the operation of battery recharger and electrical circuitry, and the production of glazing control voltages as required by radiation flow control program stored within programmable micro-controller (according to claims 1 and 10). An electro-optical glazing panel comprises a first electrically-passive cholesteric liquid crystal (CLC) electromagnetic radiation polarizing panel, a second electrically-passive CLC electromagnetic radiation polarizing panel, an electrical-active  $\pi$ -phase retardation panel interposed between first and second electrically-passive CLC electromagnetic radiation polarizing panels according to claim 2 (column 5, lines 14-18). First and second electrically-passive CLC electromagnetic radiation polarizing panels have a first circularly polarized state when electro-optical panel is switched to first optical state of operation, wherein first and second electrically-passive CLC electromagnetic radiation polarizing panels transmit electromagnetic radiation having a second circularly polarized state when electro-optical glazing panel is switched to first optical state of operation, where in first and second electrically-passive CLC electromagnetic radiation polarizing panels reflect or transmit without absorption electromagnetic radiation having either first state or second state when electro-optical glazing panel is switched to second optical state of operation (column 15, lines 13-19) according to claim 3 (Fig. 3). As Figs. 10-10F shown, an electro-optical glazing panel comprises a first electrically-active CLC electromagnetic radiation polarizing panel, a second electrically-active CLC electromagnetic radiation polarizing panel, and an electrically-passive  $\pi$  retardation panel interposed between first and second electrically-active CLC electromagnetic radiation polarizing panels according to claim 4. A plurality of electro-optical glazing structures stacked together as a composite electro-optical

structure (column 36, lines 55-68) as according to claim 13. An electro-optical glazing structure has a controlled spectrum wherein transmission of the visible portion of electromagnetic spectrum and reflection of IR portion of electromagnetic spectrum as according to claim 17. As Figs.3A and 3B shown, an electro-optical glazing structure comprises (a) an electro-optical glazing panel of laminated construction having first and second optical states of operations; (b) optical state switching means for switching electro-optical glazing panel to first optical state of operation in order to induce electro-optical glazing structure into reflection mode of operation and for switching electro-optical glazing panel to second optical state of operation in order induce electro-optical glazing structure into transmission mode of operation; wherein electromagnetic radiation within a first pre-specified bandwidth falling incident upon electro-optical panel is totally reflected from electro-optical panel without absorption when electro-optical panel is switched to first optical state of operation and wherein electromagnetic radiation within a second pre-specified bandwidth falling incident upon electro-optical panel is totally transmitted through electro-optical panel without absorption when electro-optical panel is switched to second optical state of operation (column 17, lines 50-67 and column 18, lines 1-13) according to claims 68 and 72. A intelligent pair of sunglasses comprises a frame, a pair of optical element supported within frame, where in optical element is realized using electro-optical glazing structure (column 34, lines 16-28) according to claim 79. The first pre-specified bandwidth comprises the IR portion and UV portion of the electromagnetic spectrum for reflection; and second pre-specified bandwidth comprises the IR portion and UV portion and visible portion of the electromagnetic spectrum for transmission as according to claim 69. An electro-optical glazing structure,

in which the modes of operation can be electrically-activated or switched, while avoiding the use of energy absorbing mechanisms (column 4, lines 54-58) according to claim 84.

An electro-optical glazing structure, wherein the transmission of electromagnetic radiation can be dynamically controlled over a broad-band region of the electromagnetic spectrum, between 50% transmission to 100% reflection and between 100% transmission to 100% reflection (column 6, lines 23-30) according to claim 96. An electro-optical glazing structure, wherein the transmission of electromagnetic radiation over the UV and IR regions of the electromagnetic spectrum can be totally reflected, rather than absorbed, reducing the temperature cycle range which the window structure is required to undergo (column 6, lines 31-38) according to claim 97. An electro-optical glazing structure wherein only UV and IR radiation is reflected at the window surface, while electromagnetic radiation over the visible band is transmitted to the interior environment being maintained under thermal control (column 6, lines 40-45) according to claim 98. An intelligent window system for installation within a house or office building, or aboard a transportation vehicle such as an airplane or automobile, wherein the An electro-optical glazing structure thereof is supported within a prefabricated window frame, within which are mounted: a electromagnetic-sensor for sensing electromagnetic conditions in the outside environment; a battery supply for providing electrical power; a electromagnetic-powered battery recharger for recharging the battery; electrical circuitry for producing glazing control voltages for driving the electrically-active elements of the An electro-optical glazing supported within the window frame; and a micro-computer chip for controlling the operation of the battery recharger and electrical circuitry and the production of glazing control voltages as required by a radiation flow control program

stored within the programmed microcontroller (column 6, lines 45-62) according to claim 99. An intelligent pair of shutter glasses, in which each optical element is realized using an electro-optical glazing structure fashioned to the dimensions of a shutter glass frame (column 7, lines 6-10) according to claim 101.

*Allowable Subject Matter*

4. Claims 47, 50, 52, 56, 65 are allowed. The following is a statement of reasons for the indication of allowable subject matter: There are two new subject matters presented in these claims: (a) an electro-optical panel comprises a sheet having a large plurality of pairs parallel to surface to surface of sheet, each pair of layers having a different between the materials in each layer of the pair, the difference being in the index of refraction for electromagnetic radiation having the first linear polarization, wherein there is little difference in the index of refraction for electromagnetic radiation having the second linear polarization, the total thickness of each pair of layers in the large plurality of layers varying non linearly across the sheet; (b) an electro-optical structure/panel further comprises a controllable scattering layer.

5. Claims 28-31, 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703)306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SIKES L WILLIAM can be reached on (703)308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-5841 for regular communications and (703)308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0530.

HOAN C. NGUYEN  
Examiner  
Art Unit 2871

chn  
July 10, 2001



**William L. Sikes  
Supervisory Patent Examiner  
Technology Center 2800**